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Federal Communications Commission
Office of the Secretary

From: Anthony Will [comfrk@ll.net]
Sent: Thursday, November 04, 2004 11:59 AM
To: WBATF
Subject: Late comments on DA-04-1266A1

Hello,
It was made known that individual operator comments were asked for in regards to the expired informational gathering docket DA-04-1266A1. I have copied my input that was given to the WISPA membership for use on the collective posting.

Here is the meat of the document. I placed my comments in line.

(FCC) We seek comment on the following questions:

> >1. To what extent are both licensed and unlicensed wireless broadband
> networks providing an alternative facilities-based platform to other
> broadband services, including cable and DSL? To what extent have
> wireless broadband service providers increased broadband access and
> competition in rural and undeserved areas? If so, are regulatory
> changes needed to promote or advance these trends?

Due to the telcom's large expenses and time need to install the needed infrastructure to serve rural America, it is unlikely for this industry to ever come to these area's unless it is mandated and payed for on the backs of the tax payer. The Wireless Internet Service Providers (WISP)'s of the nation are filling this important need for our nation. The real issue here is expectation of quality of service. Does the rural American citizen deserve or require the need for a high speed connection that is as of the same quality as their power or phone is now? Is this service expected to replace existing services with more advanced technologies such as VOIP and video / TV streaming? While using unlicensed technologies has allowed and will continue to allow for operations to expand in a quick and very cost effective manor. It will come to a point where we (WISP's) will no longer be able to provide a suitable service to our customer except in the most remote of area's due to interference from other operators and devices in the same band. Walking into a customers home that has two wireless phones (2.4, 5.8) at least one microwave a baby monitor and several wireless networking devices makes it nearly impossible to install the customer. The needed time to train the customer and change all of "his/her" equipment is to costly up front and likely down the road and to change our equipment could effect 10's to 100's of customers. To continue the fast growth of this industry to cover the entire nation we (WISP's) will need a band of spectrum that is exclusive to this arena while still allowing for quick and cost effective growth aka unlicensed but dedicated to broadband services or at least computer / communication services. Any future ruling's should always have that foremost in mind.

> >2. Does the Commission currently provide sufficient spectrum suitable

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> for wireless broadband networks? Is the relative availability of
> spectrum for licensed services or unlicensed devices appropriate? If
> not, how so?

See above

> >3. Do the services offered using unlicensed devices and those using
> licensed networks complement each other? If so, how?

In a word yes. Licensed Point to Point links from large metropolitan area's allow for low cost, large capacity connections to the Internet infrastructure. The resent rulings allowing and working towards more secondary licenses will continue to foster competition and thus a cost effective market for this.

> >4. There are several different regulatory approaches that determine
> access to the spectrum for wireless broadband service providers.
> Service providers using networks composed of unlicensed devices do not
> pay for access to the spectrum, but must not cause interference and
> must share the spectrum with other operators of unlicensed devices,
> whereas access to other spectrum is obtained through licensing after
> successful bidding at auction. In addition, some spectrum has been
> made available on a first come, first served basis. Has the method for
> access to spectrum affected the development of wireless technologies
> and the provisioning of wireless broadband services? If so, how?

Lack of availability to effectively compete for spectrum at an auction due to the established industries economic foothold has made the purchase of licensed spectrum nearly an impossibility. This will continue to be the case for many years until we see a consolidation of the (WISP) industry if that should ever happen. Due to the low entry cost of unlicensed we are and will continue to see new startup organizations in the arena for the foreseeable future.

> >5. Wireless broadband offers clear advantages over other broadband
> alternatives in terms of both portability and mobility. Do the
> Commission's rules effectively provide for or account for these
> capabilities? Could these rules be more flexible? If so, how?

In order for true mobility to happen the WISP industry will have to create a roaming policy allowing them selfs for this to happen. At this time I am unaware of any hindering rules that would effect this issue.

> >6. Are there regulatory incentives that would foster continued
> investment in and deployment of state-of-the-art technologies? If so,
> what are they? Are the incentives different for licensed services as
> compared with services offered using unlicensed devices?

Unlicensed services literally scare large investment organizations. They see this as to volatile a corner stone for a truly viable business case. To this end the only way to attract large investments is to use licensed but due to the cost of licensed spectrum and then the equipment the investment is largely inadequate to compensate for expenses. The only viable road for rural WISP's at this time is unlicensed with very moderate or .... non existent investments. These investments are generally coming from the WISP owner's own pocket and thus expansion is slow in coming. If we had available a dedicated section of spectrum for use that was close to an already existing unlicensed band so that only a

software change could be used to utilize the new spectrum. This new spectrum would need to be created in such a way so that other "consumers" items such as baby monitors, telephones, ect. were not allowed to utilize it. The very "corner stone" we base our services would not be in jeopardy 24/7 from so many potential interferences that it could be impossible to track down. Thus making it much more probable to gain traction in the investment arena.

> >7. We seek comment on the extent and nature of the deployment of
> wireless broadband services. For example, we are interested in data
> regarding market penetration rates; the geographic distribution of
> wireless broadband services; the extent of competition in the areas in
> which wireless broadband is deployed; and whether licensed services,
> unlicensed devices, or a combination of both licensed service and
> unlicensed devices are used; and the types of technologies used in the
> networks deployed.

Very Fast Internet is based in Granite Falls, MN We cover an est. area of 3,000 miles stretching 40 miles wide and 100 miles long going though central MN. We cover an est. 3,000 truly rural homes (does not include city townships population) that do not have an alternative other then satellite. The entire network is unlicensed and will continue on that same spectrum path for the foreseeable future. A licensed link into the capital / Metro area is likely in the future. All consumer and point to point radio's are based on DSS technologies. GPS timing is used to coordinate the towers and allow for frequency reuse.

> 8. With the continued development of new technologies and network
> configurations, including mesh networks and integrated wireless
> broadband networks and devices that use both licensed and unlicensed
> spectrum, are there any rules that require review for updating or
> increased flexibility?

The expensive process for manufactures to certify antenna systems, coupled with agreements that manufactures make with antenna manufactures has made it difficult for us to create a truly cost effective home premise equipment solution. The cost of these "certified" solutions are generally twice the cost of comparable and even higher quality components. The FCC's recent ruling that changed this process is still not clear but as has been discussed within the WISP industry and found to be either more prohibitive or of no real substance. We as operators need to be able to use comparable equipment that is as cost effective as possible while still staying within the power limits defined by the FCC.

> 9. We also seek comment on the types of applications associated with
> wireless broadband deployment.

a. What types of applications are or will be offered over wireless broadband networks? Are they similar to the applications of the wired Internet (email and web surfing), or are other, more personalized, niche applications being developed? Do the applications differ between licensed and unlicensed networks? What is the relationship between network operators and content providers?

The applications on our network allow for all the services provided on wired networks such as VOIP, streaming video, email, web surfing, remote office connections, telecommuting. As stated previously our entire network is unlicensed spectrum. We are partnered with a local Low Power Television Repeater co-op. We expect to utilize the partnership to provide television services in the future over our unlicensed network.

b. What are typically available data rates, and at what pace are they

increasing?

Data rates start at 128kb to 4 mb. Our slowest connection rate / speed is expected to double ever 18 months or as competition dictates.

c. Is the traffic associated with wireless broadband more typically symmetric or asymmetric? Does the relative distribution of these traffic patterns affect the required bandwidth for wireless broadband systems? If so, how?

Due to the nature of current equipment offerings being half duplex. Asymmetric would be likely more encountered but my experience with our network and competitions networks is that symmetric is generally the base offering. We offer symmetric up to 1 meg then Asymmetric as speeds increase.

d. What is the distribution of wireless broadband between fixed, mobile, and portable installations?

Our network is 95% fixed with only repeaters at local installations allowing for mobile services.

10. While we are interested in these deployment data across larger geographic regions and on an aggregate basis, we are also interested in information about wireless broadband deployment in specific communities -- rural or urban, large or small, and in varied geographic regions. With a view toward using successful deployments as models or examples for other service providers or communities, have there been pilot or full-scale programs that have been particularly innovative or successful in terms of increasing access to broadband through wireless facilities?

This has been tried in MN by Xtratyme Technologies Inc. They are no longer in business and where accused of fraudulent dealings. Due to this in our area we have found that most organizations are "gun shy" of this type of approach though it does have some interest to our organization.

|> 11. Are there ways in which federal wireless broadband policies could facilitate better available policy options for states and municipalities? If so, how?

Allowing states and municipalities to subsidize this industry will make for a very uncompetitive market and in the end likely cause the cost of this service to be to costly for customers. We are currently competing with Chaskanet. A city subsidized network that even though is not in our coverage area is effecting our marketing abilities in the areas that are close to this service. Chaskanet is offering the service at a rate that is impossible to compete with. Customers in surrounding areas believe that they are entitled to the price available in this area without realizing that the people that are serviced by Chaskanet are paying for it with tax money and the city is taking on most of the cost of the network it's self. This has caused us to not market or actively pursue this area for further growth and the people in this territory will likely not see any service for the foreseeable future.

> 12. What barriers (information, infrastructure) to entry remain for
> WISP entrepreneurs particularly for unlicensed services? To the extent
> identified, how can government address these issues?

The cost of our bandwidth to the Internet infrastructure is nearly $1200 for one T1. The new deregulation of the communications industry is likely going to negatively impact this cost even further. We will have to find a different approach to connect our network to the existing infrastructure such as a licensed link into the largest / closest metropolitan area to be able to afford service to the Internet. This is

the single largest expense that is regulated by the FCC at this time other then licensed spectrum. This is a very prohibitive cost for startup's to overcome. The FCC has gone backwards in this respect in my opinion but only time will tell.

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